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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,272	02/27/2004	Elaine W. Jin	86387SHS	9378

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EXAMINER	
LEE, JOHN W	
ART UNIT	PAPER NUMBER
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/789,272	JIN ET AL.	
	Examiner	Art Unit	
	JOHN Wahnkyo LEE	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-57* is/are pending in the application.

4a) Of the above claim(s) *4,8,24-34,37 and 44-52* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3, 5-7, 9-23. 35-36, 38-43 and 53-57* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 27 July 2009 has been entered.

Claim Objections

2. Claim 43 is objected to because of the following informalities: The claim limitations are numerated as a)-f). However, claim limitations b)-f) are under claim limitation a) and not independent claim limitations, which make the numerator inconsistent. The claims b)-f) should have been something else such as "a1)-a5)." Appropriate correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-23 and 53 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent[1] and recent

[1] *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

Federal Circuit decisions[2] indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing. This is referred to as the "machine or transformation test", whereby the recitation of a particular machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility (See *Benson*, 409 U.S. at 71-72), and the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity (See *Flook*, 437 U.S. at 590"). While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform an article nor positively tie to a particular machine that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 3-23, 35-36, 38-41, 43 and 53-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woods et al. ("Image Distortion in Stereoscopic Video System") in view of Dhond et al. ("Stereo Matching in the Presence of Narrow Occluding Objects Using Dynamic Disparity Search").

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[2] *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

Regarding claim 1, Woods discloses a method for customizing scene content, according to a user or a cluster of users, for a given stereoscopic display, comprising the steps of: a) obtaining customization information including a stereoscopic image fusional range for the user or cluster of users; (page 2; section 1.2, “V-viewing Distance” , “e- Eye Separation") and e) applying the customized disparity map or rendering conditions for rendering or mad re-rendering the stereo images for subsequent display, wherein rendering or re-rendering the stereo images is responsive to the stereoscopic image fusional range for the user or cluster of users. (page 1, section 1 and page 10, section 3.1.1). However, Woods does not disclose all the claim limitations. Instead of Woods, Dhond discloses b) obtaining a scene disparity map for at least one of a pair of given stereo images or a three-dimensional (3D) computer graphic model (page 721, section A, “BG and FG”); e) determining an aim disparity range for the user or cluster of users (page 721, section A, “[min_disp, max_disp]”); d) at least one of generating a customized disparity map or rendering conditions for a three-dimensional (3D) computer graphic model (page 721, section F, “dcomp (i, j)").

Adding the dynamic disparity search-based algorithm taught by Dhond to Woods's Stereoscopic Video System does no more to Wood's system than it would do if it were added to any other system. The function remains the same. Predictably, the dynamic disparity search-based algorithm adds greater reliability and efficiency to the Stereoscopic video detection.

Thus, one of ordinary skill in the art would have been motivated to update Wood's Stereoscopic Video System with the dynamic disparity search-based algorithm

taught by Dhond, and thereby gaining, predictably, the commonly understood benefits of such adaptation, that is a reliable and efficient disparity search algorithm for the stereoscopic video detection.

Regarding claim 3, Woods further discloses comprising a step f) comprising at least one of: (i) obtaining display attributes prior to determining the aim disparity range for the user (page 2; section 1.2) (ii) displaying the stereo images (page 1, section 1 and page 10, section 3.1.1); and (iii) determining a viewing distance of the user (page 2; section 1.2, “V-viewing Distance”, “e- Eye Separation").

Regarding claim 5, Woods further discloses wherein the stereo images or 3D computer graphic model being obtained (page 1, section 1, “stereoscopic image”).

Regarding claim 6, Dhond further discloses wherein the scene disparity map being obtained for rendered stereo images (abstract, “stereo”).

Regarding claim 7, Woods further discloses wherein a scene convergence point and depth information being obtained from the 3D computer graphics model (Figure 7; page 8, section 2.1).

Regarding claim 9, Dhond further discloses wherein the step of generating a customized disparity map further including using the scene disparity map for specific scene content and the aim disparity range according to the user in combination with a predetermined mapping function (page 721, section A).

Regarding claim 10, Dhond further discloses wherein the predetermined mapping function being dependent on a region of interest (page 721, section A, “BG and FG”).

Regarding claim 11, Dhond further discloses wherein the region of interest being dynamic (page 721, section A, “DHL”).

Regarding claim 12, Woods further discloses wherein the rendering intent being dependent on skill of the user within a stereoscopic viewing environment (page 2; section 1.2).

Regarding claim 13, Woods further discloses wherein the rendering intent correlating to a type of task that the user will perform in a stereoscopic viewing environment (page 2; section 1.2).

Regarding claim 14, Dhond further discloses wherein the step of generating the customized disparity map including a re-mapping process (page 721, section F).

Regarding claim 15, Woods further discloses wherein the step of generating the customized disparity map being accomplished by applying a linear transformation to the scene disparity map (page 8; section 2.2).

Regarding claim 16, Woods further discloses wherein the step of generating the customized disparity map being accomplished by applying a non-linear transformation to the scene disparity map (page 8; section 2.2).

Regarding claim 17, Dhond further discloses wherein a plurality of disparities in the scene disparity map being increased after re-mapping the customized disparity map (page 721, section F).

Regarding claim 18, Dhond further discloses wherein a plurality of disparities in the scene disparity map being decreased after re-mapping the customized disparity map(chapters IV-A and F).

Regarding claim 19, Dhond further discloses wherein the region of interest being based upon a measurement of fixation position (Fig. 3; chapter IV-C).

Regarding claim 20, Dhond further discloses wherein the region of interest being based upon a map of probable fixations (Fig. 3; chapter IV-C).

Regarding claim 21, Woods further discloses wherein the step of determining an aim disparity range undergoes a calculation based on parameters selected from the group consisting of a viewing distance for the user and the display attributes (chapter 1-1.2; pages 2 and 3).

Regarding claim 22, Woods further discloses wherein the step of generating rendering conditions for a three-dimensional (3D) computer graphic model including computing a location, an orientation, a focal distance, a magnification and a depth of field correlating to a pair of simulated cameras (Figs. 1-3; equations (1)-(14); chapters 1-1.2 and 1.3; pages 2-5).

Regarding claim 23, Woods further discloses wherein the step of applying the rendering conditions involving modifying one or more of a set of correlating camera measurements that include camera location, orientation, focal distance, magnification and depth of field (Figs. 1-3; equations (1)-(14); chapters 1-1.2 and 1.3; pages 2-5).

Regarding claim 35, claim 35 is analogous to claim 1. See rejection of claim 1 for further explanation.

Regarding claim 36, Woods further discloses wherein the stereoscopic image fusional range for the user being determined using at least one of a capability of the user to converge the user's eyes, a capability of the user to diverge the user's eyes, a

user's phoria, a user's capability of accommodation, a user's range of fusion, and a rendering intent of the image (Figure 1(a) an 1(b); page 2, section 1.1, “(a) the viewing distance of the observer from the display” and “(c) the distance between the viewer’s eyes”).

Regarding claim 38, Woods further discloses e) an input device communicatively linked to the processor for providing input data and/or functions to the processor (page 1, section 1.1, “stereoscopic camera”).

Regarding claim 39, Woods further discloses, a sensor communicatively linked to the processor for providing sensory data and/or functions about the user to the processor (page 1, section 1.1, “stereoscopic camera”).

Regarding claim 40, Woods further discloses wherein the sensory data including head positioning, accommodative of a state of the user's eye and a direction of eye gaze of the user (Figure 1(a) an 1(b); page 2, section 1.1, “(a) the viewing distance of the observer from the display” and “(c) the distance between the viewer’s eyes”).

Regarding claim 41, claim 41 is analogous and corresponds to claim 1. See rejection of claim 1 for further explanation.

Regarding claim 43, Woods discloses a stereoscopic display system that determines an aim disparity range associated with a stereoscopic user, comprising: a) means for determining aim disparity range based on optometric data, wherein said means further include (Figure 1 (a) an (b); page 2, section 1.1, “the camera system configuration” an “camera field of view”): b) means for obtaining optometric parameters for a set of accommodation planes (Figures 2 an 3, pages 2-3, section 1.2, "variables

such as t, f, Wc, Ws"); c) means for generalizing the optometric parameters for a different set of accommodation planes (Figure 2 and 3; equations (1)-(4); pages 3 and 4, section 1.3, “CCD coordinate transform”); d) means for calculating optometric parameters for a single accommodation plane of display (Figure 2 and 3; equations (12)-(14); pages 3 and 4, section 1.3, “image space coordinate transform”). However, Woods does not disclose all the claim limitations. Instead of Woods, Dhond discloses e) means for obtaining a comfort level related to the user's fusing capability (page 721, section A, “[min_disp, max_disp]”); and f) means for determining the aim disparity range (page 721, section F, “dcomp (i, j)").

Adding the dynamic disparity search-based algorithm taught by Dhond to Woods's Stereoscopic Video System does no more to Wood's system than it would do if it were added to any other system. The function remains the same. Predictably, the dynamic disparity search-based algorithm adds greater accuracy and efficiency to the Stereoscopic video detection.

Thus, it would have been obvious to one of ordinary skill in the art to apply the dynamic disparity search-based algorithm taught by Dhond to improve Wood's Stereoscopic Video System for predictable results of enhancing the accuracy and efficiency.

Regarding claim 53, Dhond discloses selecting a mode (chapter IV; page 720, “BG and FG disparity pools”) of determining an aim disparity range for the user. Rest of the claim limitations are analogous and correspond to claim 1. See rejection of claim 1 for further explanation.

Regarding claim 54, claim 54 is analogous and corresponds to claim 35. See rejection of claim 35 for further explanation,

Regarding claim 55, claim 55 is analogous and corresponds to claim 38. See rejection of claim 38 for further explanation.

Regarding claim 56, claim 56 is analogous and corresponds to claim 39. See rejection of claim 39 for further explanation.

Regarding claim 57, claim 57 is analogous and corresponds to claim 40. See rejection of claim 40 for further explanation.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Woods et al. ("Image Distortion in Stereoscopic Video System") in view of Dhond et al. ("Stereo Matching in the Presence of Narrow Occluding Objects Using Dynamic Disparity Search"), and further in view of Zhang (US 2003/0197779).

Regarding claim 2, Woods and Dhond disclose all the previous limitations except the one specified in claim 2. However, Zhang further discloses wherein the customization information includes at least one of a user profile and/or a rendering intent subject to a predetermined task choice and skill level (Fig. 3-307; paragraph [0034], "personalize three dimensional model of the conferee stored in a database").

Adding the steps of using the information of the personalize three dimensional model of the conferee stored in a database disclose by Zhang to the combination of Woods and Dhond does no more to the combination than it would do if it were added to any other system. The function remains the same. Predictably, using the personalize

three dimensional model of the conferee stored will add reliability and robustness to the combination.

Thus, it would have been obvious to one of ordinary skill in the art to apply using the information of the personalize three dimensional model of the conferee stored in a database disclose by Zhang to the combination of Woods and Dhond, to improve the combination for predictable results of enhancing the reliability and robustness.

Allowable Subject Matter

8. Claim 42 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. No claims are allowed.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN Wahnkyo LEE whose telephone number is (571)272-9554. The examiner can normally be reached on Monday - Friday (Alt.) 7:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samir Ahmed can be reached on (571) 272-7413. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHARLES KIM/
Primary Examiner, Art Unit 2624

/John Wahnkyo Lee/
Examiner, Art Unit 2624